results from direct addition of chyle to the urine, and (2) that the abnormal constituents are derived from the blood, no communication existing between the urinary and lymph passages. A defective catabolism of the chylous material is assumed. If the latter theory were correct, all cases of chyluria should be bilateral. Furthermore, direct communication has been found in a certain number of cases. In two-thirds of all the cases chyluria disappears either in the reclining or upright posture, and that would be impossible if the blood condition were the cause of the chyluria. The constant finding of lymphocytes in cases in which centrifugalized urine is examined also points to direct admixture of chyle. If one extracts sufficient urine with ether, cholesterin and lecithin are found. Their quantity in the chyle depends largely upon the diet. Again, the absence of glycosuria in chyluria has been urged as an argument against direct admixture of chyle to urine. But, as the author points out, Munk and Rosenstein have shown that chyle contains about 0.1 per cent. sugar on a fat and proteid diet; 0.3 to 0.4 per cent. after a carbohydrate meal. Only in the latter condition would one expect to find a glycosuria. The absence of clotting in some cases is also without significance, for in certain instances lymph and chyle fail to clot. Magnus-Levy assumes that in all cases a direct communication must exist between the lymph vessels and some part of the genito-urinary tract. The absence of chyluria for months and years at a time might be explained by the closure of the opening, the widening of the lymph vessels, or the establishment of collateral channels. The daily intermissions must be explained on purely mechanical grounds. This explanation of chyluria holds good both for parasitic and non-parasitic cases.

A New Test for Bile Acids and the Detection of Bile Acids in the Urine.—Since Pettenkofer's test is not specific for bile acids, giving a red color with albumin, urea, carbohydrates, fatty acids, etc., it is necessary in applying it first to separate the bile acids in the urine. Confusion may also arise in the spectroscopic examination. Therefore, a new test for the detection of these acids is desirable. JOLLES (*Hoppe-Seyler's Zeit. f. physiol. Chemie*, 1908, lvii, 30) has devised a test for bile acids in which the reagents used are 5 per cent. rhamnose solution and concentrated hydrochloric acid. If one adds one to two drops of rhamose solution to 2 to 3 c.c. of dilute (0.1 per cent.) solution of taurocholate or glycocholate of sodium and then an equal amount of concentrated hydrochloric acid to the mixture a rose color appears on gently boiling. This color soon disappears; and after standing a short time a beautiful green fluorescence supervenes. If the same experiment be repeated with 1 per cent. solutions of taurocholate and glycocholate, boiling produces a deep red color. On continued boiling the fluid appears reddish brown with transmitted light, malachite green with direct light. Neither glycochole nor taurin gives this reaction. It is, however, given by cholalic acid as shown by the following experiments: When two drops of 5 per cent. rhamnose solution and 2 c.c. of concentrated hydrochloric acid are added to 2 c.c. of 0.1 per cent. alcoholic solution of cholalic acid (Merck), a white cloud appears from precipitation of the acid. On warming the mixture a red color develops, changing into a beautiful green fluorescence on boiling. A substitution of sulphuric acid for hydrochloric gives less satisfactory results. From the rhamnose solution Jolles has found that methyl furfurol is formed by the action of the hydrochloric acid. A solution of methyl furfurol may be substituted for the rhamnose solution without altering the results of the test. But there is no advantage in doing this. In solutions the brilliancy of the fluorescence is dependent upon the concentration of the bile acids and, therefore, with very small quantities of cholalic acid the fluorescence is diminished. The minimum amount of cholalic acid in 1 c.c. of alcohol which can be detected by adding 1 drop of 0.1 per cent. rhamnose solution and 0.5 c.c. of concentrated hydrochloric acid varies between 0.005 and 0.001 gram. To render the green fluorescence more marked 1 to 2 c.c. of ether may be added after cooling and the contents of the test tube shaken. The fluorescence is then seen in a watery solution. None of the confusing substances with Pettenkofer's test will give a positive reaction with Jolles' test. For the recognition of bile acids in the urine one adds 15 c.c. of 3 per cent. casein solution (3 grams casein in 100 c.c. of water) to 50 c.c. of urine. This is well mixed and 10 per cent. sulphuric acid is added drop by drop (usually 0.6 to 0.8 c.c. is sufficient) until all the casein is precipitated. An excess of sulphuric acid is to be avoided. The contents of the test tube are now filtered and the precipitate is washed into a beaker with 100 c.c. of absolute alcohol and allowed to digest at ordinary temperature for about one hour. This is then filtered and 4 to 5 c.c. of the filtrate are placed in a test tube with one drop of 5 per cent. rhamnose solution and 4 to 5 c.c. of a concentrated hydrochloric acid. The mixture is heated to boiling and the boiling continued for one to two minutes. After cooling the contents of the test tube about 2 c.c. of ether are added and the contents shaken. In the presence of bile acids the characteristic green fluorescence is seen. The test will detect as little as 0.5 per cent. of sodium taurocholate; in concentrated urines and those rich in indican and aromatic oxy acids the test is less delicate.

The Presence of Mydriatics in the Urine.—Diem (*Deut. Arch. f. klin. Med.*, 1908, lxxxiv, 174) has repeated the work of Pal, testing the urine of nephritics and others for mydriatics on the enucleated eye of a frog. The work of Schur and Weisel seems to point to an increased quantity of adrenalin in the blood of nephritics. Diem has tested the urine in a great many patients and finds that of a little over one-half the nephritics examined produced a marked widening of the pupil in the frog's eye. This phenomenon is not, however, characteristic of nephritis, being observed with almost equal frequency in other diseases. The substance which caused the mydriasis could not be determined, but Diem thinks various factors are concerned; that it is possible that substances are present in many urines which inhibit mydriasis; and that it is highly improbable that the test is specific for adrenalin in the urine.

Specific Stimulation of the Intestinal Peristalsis by Intravenous Injection of "Peristaltic Hormone."—Zuelzer, Dohrn, and Marxer (*Berl. klin. Woch.*, 1908, xlv, 2065) were led to the study of intestinal peristalsis by the work of Starling on the mammary gland and that of Bayliss and Starling on secretion. They suspected that a hormone existed in the stomach which acted as a specific stimulus to intestinal peristalsis, and they succeeded in demonstrating such a body in the gastric mucosa, to which they gave the name "peristaltic hormone." To obtain it the animal must be taken at the height of digestion. It is not obtained from the fasting stomach. This hormone, like others, acts through the blood. If one injects it intravenously in the rabbit, an energetic contraction extending from the duodenum to the rectum begins in a few seconds. To prepare the hormone, they extracted the gastric mucosa with salt solution or dilute hydrochloric acid and precipitated the albumin with alcohol. The stomachs of various animals, the rabbit, pig, horse, and cattle, contained the hormone. In cattle it is only found in the glandular part of the stomach. A similar hormone, weaker and not constantly present, may be obtained from the duodenal mucosa. In a subsequent communication the authors will consider the therapeutic uses of this body. [The possible importance of this discovery from a therapeutic standpoint is easily appreciable.—W. S. T.]

The Ethereal Sulphates in the Urine in Auto-intoxications.—R. BRUNON and M. GUERBET (*Presse médicale*, 1908, lxxxv, 673) have noted previously that the proportion between the ethereal sulphates and the total nitrogen may be of great service in the diagnosis, treatment, and prognosis in cases of auto-intoxication. In the normal individual the quotient obtained by dividing the amount of ethereal sulphates by the total nitrogen gives figures usually varying between 1 and 1.4; whereas, in the auto-intoxications this is greatly increased. Brunon and Guerbet report in detail their observations on 15 cases of auto-intoxication, followed closely as regards this relation, and in all they found the quotient higher than normal, and up to 3.16 (some authors report it as high as 6 to 7), but as the signs of the auto-intoxication diminish, the quotient became smaller, until, when cured, the patients showed a normal quotient again.

A New Microchemical Test for Mucus in the Feces.—HECHT (*Wien. klin. Woch.*, 1908, xxi, 1554) employs a 2 per cent. solution of brilliant green and a 1 per cent. solution of neutral red. These are mixed in equal parts. The resultant solution is about the color of Ehrlich's triacid stain. A small drop of the mixed stain is added to a bit of fecal material on a slide, mixed well, and covered with a cover-glass. The preparation is pressed with filter paper to remove the excess of stain, and is then ready for examination. The stool is stained diffusely green, the fluid being red from withdrawal of the green. The mucus is precipitated and stained a brilliant red; fibrin is stained bluish green, likewise the protoplasm of cells, and especially the cellular elements, which have imbibed alkaline soaps. In addition to mucus, bacteria, cell membranes of vegetable cells, and nuclei of cells are stained red. Clumps of bacteria can, however, easily be distinguished from mucus by using high magnification. Particles of mucus that are difficult to demonstrate otherwise are easily recognized by this method.

SURGERY.

UNDER THE CHARGE OF

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Drainage of the Brain Ventricles by Transplanted Bloodvessels.—Payr (*Archiv f. klin. Chir.*, 1908, lxxxvii, 801) reports three cases operated on for internal hydrocephalus, by making a drainage path from the ventricle to the venous current by means of a transplanted bloodvessel. The essentials of the operation consist of a water-tight conduction of the cerebrospinal fluid toward the venous path, the preservation of the normal venous circulation, the prevention of a back current of blood into the ventricle, the avoidance of hemorrhage and air emboli during or after the operation, and the avoidance of infection. When a vein, as the long saphenous, is employed for the anastomotic tube, the function of the valves must be taken into account. The longitudinal sinus should be employed as the venous trunk into which the anastomosis is to be made. Failure of the operation may result from insufficient length of the transplanted segment of bloodvessel or from unsuitable quality of the vessel (phlebosclerosis, varicosities). In some cases of congenital hydrocephalus the longitudinal sinus may be absent, or it may be obliterated by inflammation or thrombosis. Severe hemorrhage may compel one to abandon the operation, or it may fail from a poor line of sutures, primary or secondary compression, or a false direction of the transplanted bloodvessel. Necrosis of this vessel may result from disturbed nutrition, or it may follow mechanical, chemical, or thermal insult. Thrombosis of the longitudinal sinus or the drainage path may occur. The transplanted vessel may be forced out of the ventricle, or softening of the brain in the region of the drainage vessel, or secondary infection, may occur. A permanent drainage of the ventricle toward the venous current is a method of treatment not only for the internal hydrocephalus, but also for the pressure on the brain. This is of especial importance for those cases in which the cause of the condition cannot be recognized or cannot be overcome. This drainage is rendered possible, probably, because the transplanted bloodvessel is an endothelial lined passage between the ventricle and the sinus. The chief dangers, infection, air emboli, and hemorrhage at the time of the operation or later, are best avoided by asepsis, measures for provisional hemostasis, and exact suturing. There must be some provision for a valve to prevent a back flow of blood into the ventricle. When the cerebrospinal fluid cannot be drained into the blood path, one must be contented with drainage into the subarachnoid space or into the soft tissues of the scalp.